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ABSTRACT

The Multiple Alternatives Program (MAP) represented an open experimental approach to graduate education. Assuming attitudinal changes must necessarily precede effective new learning, the purpose of this study was to determine the effects of MAP on attitudes and self-concepts of participants. The statistically significant findings indicate that the MAP participants developed a more favorable attitude toward higher education than a comparable control group of regular graduate students. (Author/HS)

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ABSTRACT

The Effects of an Open Experimental Program on the Attitudes and Self-Concept of Graduate Students

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The Multiple Alternatives Program (MAP) represented an open experimental approach to graduate education. Assuming attitudinal changes must necessarily precede effective new learning, the purpose of this study was to determine the effects of MAP on attitudes and self-concepts of participants. 2 x 2 ANOVA procedures with one within subject dimension (pre-post) were employed to test each H_o ($p=.05$). The statistically significant findings indicate that the MAP participants developed a more favorable attitude toward higher education than a comparable control group of regular graduate students. No change was found for real self-concept, teacher self-concept as perceived by supervisor, progressivism or traditionalism.

The Multiple Alternatives Program (MAP) represented an open experimental approach to graduate education. MAP was concerned with the creation, implementation, and evaluation of a student-centered, multiple-alternative professional experience for the purpose of strengthening the individual teaching competencies of graduate students enrolled in an elementary education program. The project was designed to facilitate the development of specialized competencies needed for individualized instruction more effectively than conventional courses in the teacher education program. MAP was cooperatively planned by faculty members and students to meet students' individual needs witin an educational model more nearly relevant to the new directions of open learning in the public schools. Both the content and the learning process of the program focused on individualized teaching and learning. Four major types of alternatives for competency achievement were established. They consisted of series of two hour interaction sessions, independent study, "Hands On" Workshops, and clincial experiences. Competency contracts were negotiated between each participant and his advisor. The contract included the competencies to be attained, the alternatives methods of attainment, and the criteria for evaluation.

Assuming attitudinal changes must necessarily precede effective new learning, the purpose of this study was to determine the effect of MAP on the attitudes and self-concepts of the participants. The interdependence of attitudes and behavior is recognized generally by researchers. Although there is no unanimity of opinion, the traditional view has been that attitudes cause behavior. Purkey (1970) concludes that the teacher's attitudes "toward himself and his students are critical determiners of his behavior in the classroom." Cooper, Jones, and Weber (1972) cite attitudes as one of the components of the effective teacher's competencies.

METHOD

Subjects

The forty-four participants in the experimental program were recruited from the graduate student population of the University of Bridgeport, as well as the greater Bridgeport area. The only qualifications which the volunteers had were those imposed by the University of Bridgeport for all of its graduate students. Prospective participants were interested in participation on the basis of reading advance literature concerning the experimental program.

In order to provide an appropriate means of comparison, a randomly selected control group of forty-eight students was maintained. These students were enrolled in regular graduate classes in elementary education at the University of Bridgeport.

Additionally it must be noted that the Developmental Form of the Keilty-Greene Scale was administered to sixty-seven subjects, representative of subjects to be used in the study. None, however, was a member of the experimental or control groups.

Instruments

Six psychological instruments and one personal data sheet were considered. The psychological scales included Education Scale VII, Attitudes Toward Higher Education and four Self-concept Scales.

Education Scale VII is a Likert-type scale which measures two broad dimensions of attitudes toward education: progressivism and traditionalism. This instrument contains 30 items and has been found to be factorially valid and reliable.

The Attitudes Toward Higher Education scale was developed specifically for this study. The developmental form contained a total of 50 items from

which 25 statistically sound items were generated. This scale produces scores which range from 1 (negative attitude) to 5 (positive attitude) and represent the mean item included in an effort to minimize response set. During the course of the experiment the scale was found to be reliable and valid.

The four Self-concept scales provided measures of four dimendions of self-esteem: real, ideal, as a teacher, and as a teacher perceived by the supervisor. Each of these measures is based on a semantic differential scale. A 4 point graphic scale is used to record the subject's relative position with respect to bipolar adjectives. Each scale contains 36 items.

Procedure

All MAP participants were pre-tested for attitudes and self-concept prior to the start of the program early in October. At this time the control group was pre-tested with the same instruments. Post-tests were administered to both groups early in April. The same tests were employed for both groups.

For the purpose of developing the Keilty-Greene Scale sixty-seven subjects, each of whom was an elementary education graduate student, were used. In early September of 1971, this group was administered the Developmental Form of the scale.

Statistical Analysis

The original source of items for the Keilty-Greene Scale was lists of ten positive and negative statements solicited from five professors in the field of graduate elementary education. Both positive and negative items were included to reduce response set. From these statements a developmental form was devised.

An item analysis of the developmental form followed using these guidelines:

a. The item pool was initially analyzed on the basis of the preliminary administration of the instrument as well as a subjective evaluation of individual items regarding ambiguity.

b. Discrimination index: if more than 80% of the subjects responded to an item in the same category the item was deleted.

c. Direction of discrimination: correlation coefficient between each item and total score was generated. Items which did not correlate significantly (.33) were eliminated.

The first null hypothesis tested at the .05 level of significance was that there was no significant difference between the experimental and control groups in self-concept.

The second null hypothesis tested at the .05 level of significance was that there was no significant difference between the experimental and control groups in attitudes.

Because the MAP participants were volunteers, pre-existing differences between the experimental and control groups were a major concern. Hence, the following variables were considered:

a. Years of teaching experience.
b. Certification status.
c. Sex.
d. Age.
e. Graduate courses completed (number).

These variables and the pre-tests constituted a set of possible covariates. Multiple regression procedures were employed to determine if the covariates were statistically meaningful.

Depending on the results of the above analyses, analysis of variance/covariance procedures were utilized to test the corresponding null hypothesis of no difference between the groups at the .05 level of significance for each dependent variable.

RESULTS

Instrument Development

To better understand the development of the Keilty-Greene Scale, Attitudes Toward Higher Education, the reader's attention is drawn to the fact that a fifty item developmental form was used to derive the resulting

twenty-five item scale.

Table 1 pictures the results of the statistical analysis and the corresponding item status. Examination of the table reveals that five items were eliminated because of ambiguity, eighteen as a result of failing to discriminate significantly in the appropriate direction as indicated by correlation with total score, and two on a "random basis".

A split half (odd-even) reliability of .87 (Spearman-Brown correction to .93) was obtained for the developmental form. Correlations of .88 and .94 were obtained for a similar split-half reliability and Spearman-Brown correction, respectively, for both the pre-test and post-test administration of the final form. Correlations may be viewed as measures of internal consistency with regard to the content sampling of the instrument. Thus, the test items are homogeneous.

The test-retest reliability for eighty-six subjects over a period of six months was found to be .60.

The results of the multiple regression analyses for the covariate determination are presented in Table 2. For each dependent variable, the pre-test was statistically selected as the best predictor or covariate. As may be seen by examining the R_2-R_1 and the R_6-R_1 differences, additional covariates did not appreciably offer greater prediction power. Consequently, it was deemed that only the pre-test would serve as a covariate. Further, no other independent variables generally appeared as prominent predictions.

Although R_1 may also be viewed as a test-retest reliability, it should be recognized that the five self-concept measures were relatively unreliable.

The statistically significant findings indicate that (1) the MAP participants developed a more favorable attitude toward higher education during the study while the subjects in regular graduate programs became less appreciative of higer education ($p < .01$); (2) the self-concept as a teacher of all subjects increased during the study ($p < .01$); and (3) the ideal self-concept of all subjects decreased

during the study ($p < .05$). As no significant progressivism or traditionalism differences were noted between or within the control and experimental groups during the study, it also seems clear that it is possible to bring about attitudinal changes toward higher education in programs concerned with new directions in education without altering the progressivism or traditionalism referents of participants.

CONCLUSIONS/RECOMMENDATIONS

A first and indeed the most important conclusion reached after careful scrutiny of the data is that the individual nature of the program leads to positive changes in attitudes toward higher education. This conclusion is supported by the data derived from the K-G Scale for Attitudes Toward Higher Education. ($P < .01$). The researcher concludes that the mode of instruction which was personalized in nature, has had a significant effect on the attitudes toward higher education. When considering that the process and content of individualized learning were the concerns of the MAP program, the appreciation of the process as indicated by the data must be considered to be a critical measurement.

A second conclusion relates to progressivism and traditionalism. It seems clear that as no significant differences took place between, or within, the control and experimental groups during the study, that this aspect of the program was not effective. This finding combined with the first conclusion, relating to attitudes toward higher education, leads the researcher to a third conclusion, that it is possible to bring about change in attitudes towards higher education without altering the progressivism or traditionalism referents of participants in an individualized program. When considering these conclusions singly or collectively, it would seem that there is a need for further research into ways of effectively changing attitudes

toward progressivism and traditionalism after changing attitudes toward higher education.

A fifth conclusion relates to the measures of self-concept taken during the study. As no significant differences were found between the control and experimental groups in any of the data collected by the four instruments administered during the study, it can be concluded that the MAP program was ineffective with regard to this aspect of an individual's self-appraisal. The reasons for such a result appear to lie in the fact that it is difficult to change self-concept in adults. This difficulty was aggravated by the short period of time (six months) during which the program attempted to bring about such changes.

The conclusions of this study lead to a number of important recommendations for future research. Of these, none is more obvious nor important than the need for a follow-up study to be conducted during the next several months. Such a study should be carried out in the classrooms of the schools where MAP participants teach. The concerns of such an undertaking should be the perceptions of children and supervisors toward MAP participants. Included in the research should be data relative to the style of teaching and changes in style of teaching since participating in the experiment.

Another important recommendation is that additional research needs to be conducted in the area of the relationship between progressivism and traditionalism and individualized learning. The key question in such research might concern itself to ascertaining the antecedents of attitude a study could then inform on the content and process of individualizing learning, as well as its implications for attitude changes toward higher education.

The last recommendation for future research is that a comparative analysis of the results of the MAP program and future programs developed to report on special competencies for individualized instruction be undertaken when and if

such programs develop. The data collected from such research could help to frame the implications of this study in the proper perspective.

Bibliography

Cooper, James M., Howard L. Jones, Wilford A. Weber. "The Specification of Teacher Competencies." Paper presented at the annual meeting of the American Educational Research Association, Chicago, April, 1972.

Keilty-Greene Scale, Attitudes Toward Higher Education. University of Bridgeport, Bridgeport, Connecticut, 1971.

Kerlinger, Fred N. Education Scale VII. New York University, 1968.

Kerlinger, Fred N. Manual for Education Scale I, II, VI, and VII. New York University, 1968.

Purkey, William W. Self-Concept and School Achievement. New Jersey: Prentice-Hall, Inc., 1970.

Soares, Anthony T. and Louise M. Soares. Soares and Soares Self Perception Inventory. University of Bridgeport, Bridgeport, Connecticut, 1967.

Soares, Anthony T. and Louise M. Soares. Scoring Manual Self-Concept Scale. University of Bridgeport, Bridgeport, Connecticut, 1967.

TABLE 1

ANALYSIS OF DEVELOPMENTAL FORM:
ATTITUDE TOWARD HIGHER EDUCATION SCALE
N=67

Decision/action code:
1 - retain
2 - delete, item is ambiguous as stated
3 - delete, poor discrimination
4 - delete, low correlation with total score
5 - delete, on random basis to obtain desired number of items

item #1	r with total score*	frequency of response option SD	D	N	A	SA	decision/ action
1	.14	2	2	28	4	11	4
2	.60**	10	27	11	17	2	1
3	.44**	4	9	19	18	7	1
4	.63**	7	10	18	16	16	1
5	.63**	6	6	14	29	12	1
6	.59**	3	6	27	23	8	1
7	.50**	15	26	16	7	3	1
8	.78**	3	4	7	40	13	1
9	.31**	18	23	22	3	1	4
10	.52**	33	22	3	5	4	1
11	.50**	30	23	7	5	1	1
12	.51**	29	21	6	6	5	1
13	.60**	3	9	15	26	14	1
14	.56**	3	7	19	21	17	1

TABLE 1 (Continued)

item #	r with total score*	frequency of response option SD	D	N	A	SA	decision/ action
15	.46**	6	26	20	10	5	1
16	.70**	3	15	21	19	9	1
17	.41**	1	5	19	27	15	1
18	.30**	9	28	19	8	3	4
19	.37**	8	27	17	11	4	5
20	.49**	6	25	16	17	3	5
21	.44**	9	29	19	10	0	1
22	.19	6	21	30	10	0	4
23	.53**	9	31	17	9	1	1
24	.21	4	24	12	25	2	4
25							2
26	.42**	1	14	25	19	8	1
27	.48**	3	30	17	14	3	1
28	.53**	5	21	13	19	9	1
29	.25	6	34	11	13	3	4
30	-.02	15	27	16	8	1	4
31							2
32	.32	1	25	31	8	2	4
33	.53**	6	12	19	22	8	1
34	.55**	0	13	11	19	24	1
35	.44**	1	10	17	37	2	1

TABLE 1 (Continued)

item #	r with total score*	frequency of response option SD	D	N	A	SA	decision/ action
36	.14	26	27	7	6	1	4
37							2
38	.23	3	17	15	27	5	4
39	.03	1	23	19	15	9	4
40							2
41	.28	33	26	6	1	1	4
42	.18	1	7	14	24	21	4
43	.28	2	14	11	25	15	4
44	.22	19	21	19	8	0	4
45	.49**	7	14	23	19	4	1
46	.03	2	6	12	25	22	4
47	.02	5	23	15	16	8	4
48	.57**	15	16	12	17	7	1
49	.13	11	22	23	9	2	4
50							2

* after rescaling negative items

** $p<.01$

TABLE 2

COVARIATE DETERMINATION USING STEPWISE MULTIPLE REGRESSION PROCEDURES
N=72

Code for independent variables (predictors):

1. Years of teaching experience.
2. Certification status.
3. Sex.
4. Age.
5. Number of graduate courses completed.
6. Appropriate pretest.

R_n: Multiple correlation with n predictors
R_1 may also be viewed as test-retest reliability.

Dependent Variable	R_1	R_2	R_2-R_1	R_6	R_6-R_1	Order of Independent Variables (predictors)
Self-concept (as a teacher)	.53**	.56	.03	.59	.06	6 4 5 1 2 3
Self-concept (as a teacher, perceived by supervisor)	.50	.55	.05	.56	.06	6 5 2 1 4 3
Self-concept(real)	.61	.68	.07	.71	.10	6 1 3 5 4 2
Self-concept(ideal)	.30*	.36*	.06	.42*	.12	6 3 2 1 4 5
Discrepancy self-concept (ideal - real)	.46	.52	.06	.56	.10	6 1 2 4 5 3
Progressivism	.69	.69	.00	.70	.01	6 4 2 1 5 3
Traditionalism	.65	.66	.01	.68	.03	6 4 2 3 5 1
Attitude toward higher education	.59	.66	.07	.69	.10	6 1 3 5 4 2

*$p<.05$

**All R's significant at .01 level, unless denoted with *.

TABLE 3

MEANS AND ANALYSIS OF VARIANCE FOR SOARES AND SOARES SELF-CONCEPT SCALE I

Self As a Teacher

MEANS

	Pre	Post	
Control (n=48)	37.25	42.25	39.75
Experimental (n=38)	39.66	45.47	42.57
Combined	38.31	43.67	

ANALYSIS OF VARIANCE

Source	df	SS	MS	F
Subjects	85	26805.94	315.36	
B(trt)	1	336.44	336.44	1.07
Error	84	26469.50	315.11	
Within	86	10931.56	127.11	
A (pre-post)	1	1235.50	1235.50	10.71**
AB	1	7.00	7.00	.06
Error	84	9689.06	115.35	
Total	171	37737.50		

**P<.01

TABLE 4

MEANS AND ANALYSIS OF VARIANCE FOR SOARES AND SOARES SELF-CONCEPT SCALE I

Self As Perceived by Supervisor

MEANS

	Pre	Post	
Control	42.65	44.52	43.58
Experimental	44.45	47.79	46.11
Combined	43.44	45.97	

ANALYSIS OF VARIANCE

Source	df	SS	MS	F
Subjects	85	35941.56	422.84	
B(trt)	1	272.75	272.75	.64
Error	84	35668.81	424.63	
Within	86	11466.94	133.34	
A (pre-post)	1	273.69	273.69	2.06
AB	1	22.69	132.98	.17
Total	171	47408.50	277.24	

TABLE 5

MEANS AND ANALYSIS OF VARIANCE FOR SOARES AND SOARES SELF-CONCEPT SCALE

Real Self

MEANS

	Pre	Post	
Control	37.48	35.54	36.51
Experimental	41.21	39.97	40.59
Combined	39.13	37.50	

ANALYSIS OF VARIANCE

Source	df	SS	MS	F
Subjects	85	43529.63	512.11	
B(trt)	1	706.81	706.81	1.39
Error	84	42822.81	509.80	
Within	86	12618.00	146.76	
A (pre-post)	1	113.94	113.94	.77
AB	1	5.13	5.13	.03
Error	84	12498.94	148.80	
Total	171	56147.63	328.35	

TABLE 6

MEANS AND ANALYSIS OF VARIANCE FOR SOARES AND SOARES SELF-CONCEPT SCALE

Ideal Self

MEANS

	Pre	Post	
Control	60.35	58.75	59.55
Experimental	60.06	54.08	57.05
Combined	60.21	56.69	

ANALYSIS OF VARIANCE

Source	df	SS	MS	F
Subject	85	13728.06	161.51	
B(trt)	1	264.75	264.75	1.65
Error	84	13463.31	160.28	
Within	86	9046.25	105.19	
A (pre-post)	1	533.56	533.56	5.39*
AB	1	200.31	200.31	2.02
Error	84	8312.38	98.97	
Total	171	22774.31	133.18	

*P<.05

TABLE 7

MEANS AND ANALYSIS OF VARIANCE FOR
KERLINGER A - ES SCALE VII

Progressivism

MEANS

	Pre	Post	
Control	1.79	1.87	1.83
Experimental	2.00	2.02	2.01
Combined	1.88	1.93	

ANALYSIS OF VARIANCE

Source	df	SS	MS	F
Subjects	85	40.18	.47	
B(trt)	1	1.39	1.39	3.00
Error	84	38.80	.46	
Within	86	7.55	.09	
A (pre-post)	1	.13	.13	1.43
AB	1	.04	.04	.50
Error	84	7.38	.09	
Total	171	47.73	.28	

TABLE 8

MEANS AND ANALYSIS OF VARIANCE FOR
KERLINGER B - ES SCALE VII

Traditionalism

MEANS

	Pre	Post	
Control	-.17	-.10	-.13
Experimental	-.31	-.34	-.33
Combined	-.23	-.21	

ANALYSIS OF VARIANCE

Source	df	SS	MS	F
Subjects	85	95.24	1.20	
B(trt)	1	1.64	1.64	1.47
Error	84	93.60	1.14	
Within	86	20.70	.24	
A(pre-post)	1	.03	.103	.13
AB	1	.12	.12	.49
Error	84	20.55	.24	
Total	171	115.94	.68	

TABLE 9

MEANS AND ANALYSIS OF VARIANCE FOR K-G SCALE ATTITUDES TOWARD HIGHER EDUCATION

MEANS

	Pre	Post	
Control	3.29	3.02	3.16
Experimental	3.43	3.61	3.52
Combined	3.35	3.29	

ANALYSIS OF VARIANCE

Source	df	SS	MS	F
Subjects	85	48.16	.56	
B (trt)	1	5.59	5.59	11.02**
Error	84	42.57	.51	
Within	86	12.79	.14	
A (pre-post)	1	.18	.18	1.44
AB	1	2.22	2.22	17.97**
Error	84	10.39	.12	
Total	171	60.95	.36	

**P<.01